

FEMININE FORMATION IN MODERN HEBREW*

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ABSTRACT: All Hebrew nouns have a grammatical gender, masculine or feminine. Morphosyntactic agreement is rule governed, hence adjectives, verbs, numerals and pronouns are morphologically inflected in order to match the gender of the noun. Feminine forms are morphologically typified by /+á/ or /+(V)t/ suffix, e.g., *mišṭarâ* 'police (f)', *talmid/talmidâ* 'pupil (m/f)', *toxnit* 'plan (f)', *ḥalbân/ḥalbanit* 'milkman/milkwoman'. The inflectional suffix for the feminine is determined by the masculine base to which the form belongs. Feminine forms are hierarchically controlled by morphological, morphophonemic, and morphosemantic factors. The morphological pattern is the dominant factor affecting the feminine ending, however, in cases where the masculine ending is opaque, that is, perceived as belonging to more than one category, the phonological base ending or the semantic pattern load regulates the feminine suffix.

1. Introduction: Inflection and Derivation

All Hebrew nouns have an inherent grammatical gender, masculine or feminine.¹ Feminine forms are morphologically typified by a stressed +á or by a +(V)t suffix,² e.g.,

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1. See Rosén (1957, pp. 225–228; 1977, p. 90), Berman (1978, pp. 74–77) for modern Hebrew, and Gesenius (1910, pp. 222–224, 389–394) for biblical Hebrew.

2. A few lexical items have no suffixes (see (6h) below), however, they inherently belong to the feminine nouns, e.g., *'em* 'mother', *piḥgeš* 'mistress', *'even* 'stone'. Words like *rúah* 'wind', *šemeš* 'sun', *dereš* 'way', *kos* 'glass' are considered as both masculine and feminine. In modern Hebrew they are predominantly used as feminine words.

- (1) *śusá* 'mare', *iśá* 'woman', *minsará* 'prism', *'ezrahít* 'citizen',³
śadxanít 'matchmaker', *toxníť* 'program', *'ahót* 'sister', *malxút*
 'kingdom', *migbá'at* 'hat'.

The Hebrew suffixes *+a* and *+(V)t* can be either inflectional or derivational. In general, the difference between derivation and inflection in morphology stems from the meaning relations among the morphemes in question. Morphemes, among which the connection is automatic and contains only gender, number, person, and tense⁴ distinction are inflectional, whereas those that involve no automatic relationships are derivational.⁵ For example, the relations between *house/houses*, *walk/walked*, and *go/goes* in English are inflectional. There is a number difference (singular/plural) among the morphemes in the first pair, a tense difference (present/past) among those in the second, and a person difference (first and second/third person) among those in the third. These connections are widespread among morphemes in English, and are automatic, predictable and productive. Contrary to this, the relations between *child/childhood*, *mature/maturity*, *beautiful/beauty* are derivational. The affixes are neither automatic nor predictable, although the second morpheme in each pair indicates an abstract noun. There are no **childity*, **beautihood*, **maturity*. Even if one knows the concrete noun or adjective, the derived abstract noun would be obscure unless acquired separately. The morphemes *+hood* and *+ity* are derivational, indicating the abstract noun, and no prediction can be made as to which one will be specifically chosen for a given word.

While Hebrew derivational feminine suffixes are restricted to inanimate nouns, inflectional suffixes occur in animate nouns⁶ as well as in every adjective. In inanimate nouns, the gender distinction is arbitrary; each noun is lexically assigned a grammatical gender according to the suffixal morphological clues, and must be memorized separately. In animate nouns, and in adjectives, the masculine form is unmarked, i.e., it carries no ending, whereas the feminine form is marked and takes a suffix. The nouns in (2) are inflectional, while in (3) and (4) the grammatical feminine suffixes are part of the derivational pattern.

3. The *h* indicates "het" in Hebrew orthography. It corresponds to phonetic *x* by most Israeli speakers. The spirants *f v x* replace *p b k* in our transcriptions. The vowels presented are *i e a o u*, where *e* stands for graphemic schwa as well.

4. These are the inflectional contents in Hebrew. They may vary in other languages which contain other morphological categories.

5. See the detailed discussion about inflection and derivation in Ornan (1971a, p. 16; 1979, pp. 11–12).

6. Some insects are grammatically feminine although they may be sexually differentiated, e.g., *tolá'at* 'worm', *dvorá* 'bee', *cipór* 'bird', *cfordéa* 'frog'. Note that their plural is formed by *+im* masculine type ending, i.e., *tola'im*, *dvorim*, *ciporim*, *cfarde'im*.

- (2) *talmíd/talmidá* 'pupil (m/f)', *student/studéntit* 'student (m/f)', *sportáy/sporta'it* 'sportsman/sportswoman', *'ofè/'ofá* 'baker (m/f)', *rašám/rašémet* 'registrar (m/f)'.
- (3) *dir* 'sheepfold (m)', *dirá* 'flat (f)', *sir* 'pot (m)', *sirá* 'boat (f)', *'avír* 'air (m)', *'avirá* 'atmosphere (f)', *yarid* 'fair (m)', *yeridá* 'decrease (f)', *midráš* 'study (m)', *midrašá* 'school (f)', *šir* 'song (m)', *širá* 'poetry (f)', *nayád* 'mobile (m)', *nayédet* 'patrol (f)', *me'il* 'coat (m)', *me'ilá* 'embezzlement (f)'.⁷
- (4) *švitá* 'strike', *nevu'á* 'prophecy', *sibá* 'cause', *šxenút* 'neighborhood', *mašma'út* 'meaning', *'ivrit* 'Hebrew', *cincénet* 'jar', *ša'avanit* 'oilcloth', *tafnít* 'turning'.⁸

The nouns in (3) represent pairs of masculine nouns with a zero ending on the one hand, and feminine nouns with +*á* or +(V)*t* ending on the other. Their consonantal and vocalic bases are essentially the same. They are apparently inflectional, however, since the meanings of the pair members are neither related, nor predicted, except for the very abstract root meaning in some examples,⁹ they are derivational. The examples in (4) demonstrate feminine nouns which have no masculine counterpart. Their endings indicate the grammatical gender.

Morphosyntactic agreement is rule governed in Hebrew, hence nouns, verbs, adjectives, numerals, and pronouns are morphologically inflected in order to match the gender of the nucleus noun in the sentence or the phrase. It follows, then, that not only do animate nouns have inflectional feminine suffixes; other dependent phrasal components are inflectionally marked as well. For instance, *nahéget* 'driver (f)', and *cahévet* 'jaundice (f)', are both feminine nouns. The former corresponds to *nehág* 'driver (m)', thus the +*et* ending is inflectional, while the latter has no masculine parallel; it belongs to the CaCéCet pattern. The sentences in (5) demonstrate morphosyntactic agreement. The adjective *'ayóm* 'terrible, frightening', the demonstrative *ze* 'this', and the verb *hidbík* 'overtake, infect', as in (5c), take the feminine inflected forms *'ayumá*, *zot*, *hidbika* in (5a,b)¹⁰.

- (5) a. *hanahéget ha'ayumá hazót hidbika 'otí.*
'This frightening driver (f) overtook me'.

7. This is a very small sample of pairs one of which is masculine and the other feminine, and there is absolutely no semantic gender connection between them.

8. Compare to *mifné* 'turning (m)'.

9. Some scholars tend to show semantic relations between masculine and feminine nouns derived from the same root, but the generalizations stated are quite minor and insignificant. See, for instance, Livni (1941, pp. 131-132), Gesenius (1910, p. 394).

10. Definite-article Agreement Rule places *ha* 'the' in front of the nouns, adjectives, and demonstratives in a definite noun phrase.

- b. *hacahévet ha'ayumá hazót hidbika 'otí.*
'This terrible jaundice infected me'.
- c. *hanehâg ha'ayôm hazé hidbik 'otí.*
'This frightening driver(m) overtook me'.

In this article, we shall concentrate on the morphological aspects of the feminine inflection in nouns and adjectives. As previously observed, derivation is quite arbitrary, whereas inflection is productive, linguistically required by morphosyntactic rules, and is expected to be predictable. We shall explore here the rules which govern the inflectional feminine morphemes. Apparently, there is an unreasonable complexity in this matter: *barón* 'baron' takes *baronit* for feminine, but *rišón* 'first' has *rišoná*, while *susón* 'pony' takes *susónet*. The three words, *barón*, *rišón*, and *susón*, are bisyllabic, they all end in phonetic *-on*, nevertheless they vary in the suffixes. The first is inflected by *+it*, the second by *+a*, and the last by *+et*. We shall demonstrate that the occurrence of the various endings is not arbitrary. The *+it* suffix is attached, for instance, to loan words (Section 8), *+a* is commonly added to masculine XoC stems (Section 5), and *+et* is typical of diminutive nouns (Section 10). Hence, there are obviously various factors (morphological, morphophonemic, and semantic) determining feminine inflection.

The existing descriptions of the feminine formation give partial account for the rules involved. Rosén (1957, pp. 225 ff.) describes feminine inflection in nouns as well as adjectives and participles, interspersed with other morphological inflectional and derivational processes; Ornan (1971b, pp. 37–38) systematically lists the rules for the feminine formation, but restricts his description to participle forms. The descriptions are partially abstract, since they take factors such as geminate stems into consideration. The difference between the feminine forms of *ganáv* 'thief', *hadáš* 'new', and *šafân* 'rabbit' can be accounted for by the abstract stems from which they are etymologically derived. Hence, *ganáv* stems from **gannāb*, *hadáš* from **hādāš*, and *šafân* from **šāpann*. The first form changes into feminine *ganévet*, the others into *hadašá* and *šfaná*. However, the word 'avaz' 'gander' which is etymologically identical to *ganav* (**'awwāz*) takes the form *'avazá* (like *hadaša* and *šfana*), and not **'avézet*. A classification which considers the etymological vocalized form of the word will treat *'avazá* as exceptional. Alternatively, we believe that *'aváz* belongs to the unique group of *hadáš* and *šafân*, of CaCaC pattern (no matter what their vocalization) which are nonoccupational. On the other hand, *ganáv* belongs to the large semantic category of CaCaC occupational nouns which systematically take *+et* ending (and sometimes *+it*, see Section 9). There-

fore, to the extent that is possible, we shall try to describe the distribution of the feminine suffixes by relation to phonetic and morphological rather than vocalized clues. It is our contention that the masculine form suffices to predict the feminine inflectional allomorphs. With very few exceptions, given a certain masculine form, the native speaker intuitively chooses the proper feminine suffix. The present paper focuses on the base masculine unmarked structures to which the feminine markers are added, and describes them systematically in a way which will reflect the speaker's knowledge. The description will be followed by a classification of factors which determine the distribution of feminine inflectional morphemes in relation to the masculine base stems. Exceptional cases will be explained as lexical deviations or stylistic modifications. The data are obtained from Even-Shoshan's dictionary (1970), verified in the literature and supported by productivity tests.

2. The Feminine Allomorphs

The Hebrew feminine morpheme has various allomorphs: $+ā$, $+t$, $+it$, $+et$, $+at$, $+ot$, $+ut$ and $∅$ (zero) endings. Two examples of each allomorph are listed in (6); the masculine form is indicated in brackets wherever possible:

- (6) a. *pilā* 'elephant' [*pil*], *simlā* 'dress'
- b. *'asufit* 'foundling' [*'asufi*], *plonit* 'what's-her-name' [*ploni*]
- c. *ḥadrānit* 'femme de chambre' [*ḥadrān*], *šlulit* 'puddle'
- d. *'omēnet* 'nanny' [*'omēn*], *rakēvet* 'train'
- e. *mešugā'at* 'crazy' [*mešugā'*], *kadāhat* 'fever, malaria'
- f. *'ahōt* 'sister' [*'ah*], *ḥacōt* 'midnight'
- g. *dalūt* 'poverty', *hištalmūt* 'perfection'
- h. *'em* 'mother' [*'av*], *'even* 'stone'¹¹

Historically, all the feminine endings were derived from the *t* ending preceded by a vowel¹². The phonetic stressed $+ā$ was derived from $+at$ /¹³, too, through a process of final *t* deletion in absolute state forms. In nonabsolute state forms, i.e., in construct state or in inflected forms, the *t* is retained, as in (7):

11. For a larger list of this kind, see Gesenius (1910, p. 390, §122c).

12. See Bauer & Leander (1965, pp. 507–513).

13. Gesenius (1910, p. 224) states explicitly that it is wrong to consider $+a$ as original and the $+at$ as derived from it.

- (7) *simlá* 'dress', *simlàt ha'íšá* 'the woman's dress', *simlatí* 'my dress', *simlatá(h)* 'her dress'.

The first six allomorphs (6a-e) are both derivational and inflectional. The +*ut* and zero endings (6g-h) are restricted to derivational morphemes. Evidently, the +*ot* suffix (6f) seems inflectional as in '*ah*/'*ahót* 'brother/sister', *ham*/'*hamót* '(woman's) father-/mother-in-law', and derivational as in *hacót*. However, in spite of the two pairs, it is preferable to consider it derivational for two reasons: (a) the ending is very rare and unproductive as a feminine marker; (b) '*ahót* and '*hamót* are the only two lexemes which provide evidence for the inflectional +*ot* suffix. Historical processes caused the suffixation of +*ot* onto these two morphemes '*ah* and '*ham*'¹⁴, but since they are rare and unproductive synchronically, the ending should be regarded as lexically assigned, and hence, derivational.

The distribution of '+*et* and '+*at* allomorphs as in (6d,e) is phonologically predictable. The '+*at* suffix is expected after the stem final /h/, /h/, or /'/. The '+*et* suffix occurs elsewhere, e.g.,

- (8) *šoxéxet* 'calming down' [šoxéx], *šoxáhat* 'forgetting' [šoxéah]
gidémet 'one-handed' [gidém], *gidá'at* 'dehorned' [gidéa],
govélet 'neighboring' [govél], *gováhat* 'becoming tall' [govéah]

Note that although the +*t* allomorph is exemplified in (6b) by *plonít* and '*asufít* with the vowel *i* preceding the ending, it also occurs in cases such as *nivnét* 'built' [nivné], *mištanét* 'changing' [mištané], where the vowel *e* precedes it (see Section 6).

3. Feminine Inflectional and Derivational Suffixes

There is a substantial difference in the distribution of the derivational and inflectional feminine suffixes. Table 1 summarizes the division of the various endings in percentages.

The percentages presented in Table 1 are based on data obtained from Even-Shoshan's Dictionary (1970). They clearly show that the most common feminine ending in derivational morphemes is +*á*; it includes 75% of the nouns, e.g.,

- (9) *ce'aká* 'outcry', *safá* 'language', *mesibá* 'party', *cava'á* 'will',
piná 'corner', *ecá* 'advice', etc.

14. See Bauer & Leander (1965, p. 511).

TABLE 1: Feminine suffix distribution among derivational and inflectional morphemes in percentages

Type of Morpheme	Nominal Category	Type of Suffix ¹⁵			
		+á	' + et/' + at	+it	+t
Derivational	Nouns	75	14	10	1
Inflectional	Nouns	25	22	47	6
	Adjectives	31	27	3	38

The other endings also exist, but they are less widespread¹⁶, e.g.,

- (10) *nazélet* 'catarrh', *sapáhat* 'psoriasis', *šanít* 'scarlet fever', *'afifit* 'wafer', etc.

The +a ending is less common among inflectional morphemes. The most frequent morphemes are +it (47%) in inflectional nouns and +t in inflectional adjectives (38%). The +a suffix is used with between a quarter (25%) to a third (31%) of the inflectional morphemes, and about the same rate take the +et/+at endings (22%, 27%). The +it ending is especially regular in inflectional nouns due to the high rate of bases with +an or ay endings and to the loan (and multiconsonantal) bases to which the feminine +it is attached (and see Section 8 below).

The +t is especially regular in inflectional adjectives because of the great number of adjectives ending +i, as in *rišoní/rišonít* 'primary', *'asirí/'asirít* 'tenth', *'obyektívi/'obyektívít* 'objective', etc. (Section 6 below).

Table 1 includes only feminine suffixes which are both inflectional and derivational, as in (6a-e). However, taking all the derivational feminine data into consideration, the following distribution is obtained: +a—57%¹⁷; +et/+at—10%; +it—8%; +ut—25%; others—less than 1%. The percentages are taken from 5550 feminine nouns found in Even-Shoshan; 4140 of which are referred to in Table 1. The inflectional nouns include about 950 items, and the adjectives are comprised of 5500 items.

It is obvious that derivational and inflectional morphemes are formed

15. The +et/+at ending refers to both unstressed allomorphs. The +t ending includes the rest of the inflectional allomorphs.

16. Gesenius (1910, p. 223) comments that the +et suffix is less frequent in biblical Hebrew than the +a. The +et is customary only among participles and infinitives.

17. About 30 nouns of Aramaic origin are spelled with a final 'alef instead of he, which were excluded in the calculations presented in Table 1, e.g., *nihuta* 'gentleness', *plugta* 'conflict', *tosefta* 'Tosefta', *pamalya* 'retinue'.

alike, except for the few feminine nouns of type (6h) which are rare and unproductive. The examples presented in (5) (*nahéget* and *cahévet*), and in (2–4) and (6) prove this. However, as may be recalled, the derivational suffixes belong to nouns in an arbitrary way, whereas the inflectional suffixes are rule governed. Since our purpose is to formulate the distribution of the Hebrew inflectional feminine suffixes, we shall refer to derivational processes only when they provide evidence for our inflectional findings.

4. Inflectional Markers of Participles

Ornan (1971b, pp. 37–38) proposed the following rules (A–B) to determine the feminine inflection of the participle forms in Hebrew. It is a well-known fact about Hebrew morphology that many nouns and adjectives are derived as participles (Rosén, 1957, pp. 213ff.; Merkin, 1968, pp. 140–152). Any participle form may potentially become a noun or an adjective. Therefore, Ornan's classification is important as a starting point.

- A. The *+a* suffix is attached to the masculine base form in the following conditions:
- (1) In monosyllabic bases, e.g., *kam*, *met*, *boš/kama*, *meta*, *boša* 'get up', 'die', 'ashamed'.
 - (2) When the base is one of the following patterns: XiC, XoC, XuC, XVC_iC_i (where X indicates any syllable, i.e., any sequence of consonants or vowels, C indicates any consonant including phonemic /'/, and C_i indicates an identical consonant), e.g., *morid/moridá* 'decrease', *yaxól/yexolá* 'is able to', *karú/kru'á* 'invited', *mesév/mesibá* 'turn'.¹⁸
 - (3) When the base belongs to the CaCeC pattern, e.g., *yašén/yešená* 'sleep', *ra'év/re'evá* 'hungry', *camé/cme'á* 'thirsty'.
 - (4) When the base ends in the vowel *e*, except for the niCCe base, e.g., *šavê/šavá* 'equal', *meḥakê/meḥaká* 'wait'.
- B. The *t* suffix is added to the participle base in the following cases:
- (1) When the base belongs to XaC, e.g., *nišmár/nišmêret* 'kept', *meḥubâr/meḥubêret* 'connected', *nirpâ/nirpêt* 'cured'.¹⁹
 - (2) When the base belongs to the XeC pattern (CaCeC pattern excluded), e.g., *šomer/šomêret* 'guard'.

18. In biblical Hebrew *māsibbā*.

19. As mentioned above, the C can be phonetically zero, but phonemically it may include /'/ . It is true for this example, as well as for *karú* mentioned above (A2), and others. The C is phonetically realized as unstressed *a* in case of phonemic /'/.

- (3) When the base belongs to the niCCe pattern, e.g., *nir'è/nir'èt* 'seem', *niknè/niknèt* 'bought', *na'asé/na'asèt* 'done'.

Inferred from the examples, the *+t* suffix in Ornan's formulation refers to the allomorphs *'+et* (and consequently *'+at*) as in B(1-2), and *+t*, as in B(3). Special rules derive these allomorphs from */+t/* (Ornan, 1971b, pp. 43-44). Since the rules are discussed at some length by Ornan, their formulation will not be repeated here.

By reference to Ornan's short and schematic formulations, we shall try to examine whether Ornan's statements can be generalized beyond the scope of the participles in Hebrew. Since the formulation calls for morphological and morphophonemic environments (see discussions below), it is our belief that they can cover much larger categories of nouns and adjectives than those indicated by Ornan. On the other hand, more categories will be included in our presentation because we have not limited ourselves to nouns and adjectives of the participle forms.

5. The *+a* Allomorph (6a)

In spite of its relatively low rate of occurrence in inflectional, as compared to derivational morphemes (see Section 3), the *+a* allomorph occurs in the largest number of environments. Based on Ornan's (1971b) rules, a schematic presentation of environments follows:

(a) #CVC#; (b) 1. XiC, 2. XoC, 3. XuC, 4. XVC_iC_i; (c) CaCeC; (d) Xe.

The first and last two bases, (a), (c), and (d) are morphological; (a) indicates the morpheme structure, (c) refers to a specific type of *pa'al* participles, and (d) refers to verbs of final *y* or *w* roots, except for the niCCe base. The bases presented in (b) are morphophonemic. They reflect the masculine stem endings to which the feminine suffixes are added. Note that XVC_iC_i refers to geminate roots, which are not realized phonetically, and hence, are abstract, a problem to which we shall refer later in this section.

The above stated environments hold for nouns and adjectives as well. In this formulation, the morphophonemic and morphological environments suit nouns and adjectives which share the participle patterns, as well as others of different patterns. The examples below, (11)-(18), list two items formed like participles, and other independently formed items belonging to the same environment which take the *+a* ending.

(a) #CVC#

In monosyllabic stems, only +*a* is added to form the feminine, e.g.,

- (11) *met/meta* 'dead', *dar/dara* 'dwelling', *zar/zara* 'stranger', *goy/goya* 'gentile', *gis/gisa* 'brother-/sister-in-law', *dod/doda* 'uncle/aunt', *'el/'ela* 'god/goddess', *se/seya* 'young lamb', *gdi/gdiya* 'kid', *cvi/cviya* 'gazelle', etc.

(b) 1. XiC: final closed syllable containing the vowel *i*

- (12) *madrix/madrixá* 'instructor', *manhíg/manhigá* 'leader', *nadiv/nedivá* 'generous', *'acil/'acilá* 'noble', *'asír/'asirá* 'prisoner', *gvir/gvirá* 'lord', *yahid/yehidá* 'single', *takif/takifá* 'firm', *talmíd/talmidá* 'pupil', etc.

In the verb, the environment is restricted to the *hif'il* participle. In nouns and adjectives the +*a* is regular wherever the final syllable contains the vowel *i*.

2. XoC: final closed syllable containing the vowel *o*

- (13) *yaxól/yexolá* 'is able to', *naxón/nexoná* 'right', *lakóah/lakohá* 'customer', *manóah/menohá* 'deceased', *kahól/khulá* 'blue', *yatóm/yetomá* 'orphan', *rahók/rehoká* 'far', *sagól/sgulá* 'purple', *tahtón/tahtoná* 'lower',²⁰ *pašóš/pašošá* 'warbler', *hamór/hamorá* 'ass/she-ass',²¹ etc.

The suffix +*a* is added to XoC stems whether the ending is part of the root as in *sagól*, or a derivative as in *tahtón* (from *taḥat* 'under' + *on*). This generalization is true except for the diminutive +*on* derivative suffix, see Section 9 below and the examples in (39).

3. XuC: closed syllable with the vowel *u*

- (14) *macúy/mecuyá* 'available', *garúš/grušá* 'divorced', *'arús/'arusá* 'engaged', *kašúv/kašuvá* 'attentive', *šakúl/šakulá* 'bereaved', etc.

4. XVC_iC_i: final geminate consonant

There are very few nouns and adjectives belonging to this category. In Ornan's formulation, the category refers to the geminate roots, i.e., roots with an identical second and third radical, like *sbb*, *gll*. If we try to

20. The word '*adón*' 'sir' has both feminine forms: '*adoná*' and '*adonit*'.

21. Besides '*aton*' 'she-ass' of (6h) type.

generalize beyond the scope of the verbal participle, we ought to include all the cases of etymological final geminates, as in CāCoCC/CāCuCCā (cf. 'adôm/'adumâ 'red'), CāCaCC/CāCaCCā (cf. šafân/šfanâ 'rabbit', gamâl/gmalâ 'camel'). However, cases like CāCoCC are already included in (b)2. CāCaCC could belong perfectly well to the (e) pattern discussed below. Moreover, some of the geminate roots form monosyllabic words, as in (15), hence they ought to be generalized in (a) above.

- (15) *ra/ra'a* 'bad', *rax/raka* 'soft', *kar/kara* 'cold', *dov/duba* 'bear', etc.

Only the examples listed in (16) need special consideration.

- (16) a. *mucâr/mucarâ-mucêret* 'narrowed', *muhâk/ muhakâ* 'engraved', *muhâg/muhagâ-muhêget* 'celebrated',
muhâm/muhamâ 'heated', *mufâz/mufazâ-mufêzet* 'gilded'.
 b. *mecêr/mecerâ* 'depressed', *mekêl/mekilâ* 'lenient'.

The *huf'al* type participles presented in (16a) take the +*a* ending in general; sometimes they alternate with +*et*. Phonetically, these *huf'al* forms belong to the XaC environment which typifies bases with +*et* suffix. Hence, the alternative +*et* forms here concur with the general tendency presented in Section 9 (31a).

Hif'il participles of geminate roots are included in (16b). Environment (b)1 above has already referred to the *hif'il* participles (XiC base), as well as to other patterns. The examples in (16b) could be handled, therefore, in one of the following ways: (a) exceptional subcategory of the XiC base, because, in spite of belonging to *hif'il*, the base masculine forms end phonetically in XeC; or (b) exceptionally marked lexical items which have no reference whatsoever to existing patterns. Suggestion (b) is preferable, in my opinion, because it does not violate the morphophonemic environment stated in XiC, particularly when considering the rarity of the forms involved.

It follows, then, that the geminate roots do not need any special category. Their root is phonetically opaque, and the number of cases is limited. These rare cases that do not fit any of the existing environments will be lexically treated as exceptional.

(c) CaCeC

This morphological pattern includes numerous nouns and adjectives, e.g.,

- (17) *ra'êv/re'evâ* 'hungry', *bašêl/bšêlâ* 'ripe', *'ayêf/'ayefâ* 'tired', *zakên/zkenâ* 'old', *havêr/haverâ* 'friend', *'avêl/'avelâ* 'mourner', *yagêa'/yegê'a* 'tired', *ya'êl/ye'elâ* 'ibex', *ya'ên/ye'enâ* 'ostrich', etc.

(d) Xe

Participles, nouns and adjectives with base *e* ending take the +*a* suffix (if they do not belong to niCCe pattern,²² see below Section 6), as in (18).

- (18) *holê/holâ* 'sick', *golê/golâ* 'exile', *šotê/šotâ* 'silly', *nukšê/nukšâ* 'stiffened', *merubê/merubâ* 'numerous', *memunê/memunâ* 'in charge', *na'alê/na'alâ* 'lofty', *mukê/mukâ* 'beaten',²³ etc.

Two more morphological categories must be added. They do not exist in participles, but they are quite common among adjectives and nouns: (e) CaCaC (not occupational); (f) "Segolates."

(e) CaCaC (not occupational)

The environment XaC typifies +*et* feminine ending in participle bases, and in CaCaC pattern which indicates occupation (etymologically, with medial geminate, see Section 9). In other CaCaC bases, the feminine is +*a*, e.g.,

- (19) *saxâl/sxalâ* 'silly', *raḥâv/reḥavâ* 'wide', *kacâr/kcarâ* 'short', *ḥadâš/ḥadašâ* 'new', *yašâr/yešarâ* 'straight', *'avâz/'avazâ* 'gander/goose', *'ayâl/'ayalâ* 'deer/hind',²⁴ etc.

(f) Segolates: penultimately stressed bases

- (20) *kêves/kivsâ* 'lamb', *mêlex/malkâ* 'king/queen', *kêlev/kalbâ* 'dog', *yêled/yaldâ* 'boy/girl', *nâ'ar/na'arâ* 'youngster', *bêxer/bixrâ* 'young camel', *nêxed/nexdâ* 'grandchild'.

The stems to which the feminine forms are added are penultimately stressed (not as in XeC finally stressed stems, discussed in Section 9).

22. Or to the muCCe pattern, see Section 9.

23. The words *na'avê*, *na'alê*, and *nircê* 'acceptable' belong to the niCCe pattern; *mukcê*, *mukê*, *mušvê* 'compared' and *mufrê* 'fertilized' belong to the muCCe pattern, and nevertheless they take the +*a* ending instead of the expected +*et* (see Section 4). The reason is phonetic: since both niCCe, muCCe and Xe share the same phonetic ending, the suffixal feminines fluctuate.

24. Phonetically, *makâr/makarâ* 'acquaintance' belong here, too, but the consonant *m* is a derivational marker and not part of the root stem (cf. *hekerût* 'acquaintanceship'). It fits the non-occupational CaCaC masculine stem.

Although their number is not large, they constitute a morphological environment worth special consideration.

In sum, the *+a* feminine suffix is added to the following bases: (a) #CVC# monosyllabic stems; (b) XiC, XoC, XuC stems; (c) CaCeC pattern; (d) Xe stem (niCCe, muCCe excluded); (e) CaCaC (non-occupational pattern); (f) CéCeC pattern. The *+a* suffix occurs occasionally in some other environments where its existence needs special consideration (e.g., (23c), (30a), (32a), (37)), and hence is separately handled.

6. The *+t* Allomorph (6b)

The inflectional feminine suffix *+t* occurs dominantly in nouns and adjectives which end in Xi, e.g.,

- (21) *meci'uti/meci'utit* 'realistic', *refu'i/refu'it* 'medical', *le'umi/le'umit* 'national', *savlaní/savlanít* 'patient', *soviěti/soviětit* 'Soviet', *reciní/recinít* 'serious', *musari/musarít* 'moral', *yapáni/yapánit* 'Japanese', etc.

This suffix is especially common in adjectives, as observed in Table 1. Since the *+i* suffix in itself is a productive adjectival suffix, the rate of this kind of feminine marker is very high. The exceptions are rare and include few nouns and adjectives that take *+a* ending, as in *šeni/šniyá*²⁵ 'second'. They are discussed in detail in the following "Gentilic Nouns" Section.

The *+t* is also added to Ornan's B(3) category as presented previously in Section 4. In Ornan's formulation, this *+t* suffixation is restricted to the *nif'al* verb pattern of roots with final vowels (etymologically verbs with final *y* or *w*), hence the environment is morphological. The examples in (22a) present a small sample of expected forms according to Ornan, but those in (22b) show deviations.

- (22) a. *nilvé/nilvét* 'accompanying', *nidhé/nidhét* 'rejected', *nidké/nidkét* 'depressed'.
 b. *murcě/murcét* 'narrated', *mutně/mutnét* 'conditioned', *muškě/muškét* 'watered', *mukšě/mukšét* 'hardened', *mut'ě/mut'ét* 'misleading', *mušvé/mušvét* 'compared'.

The examples in (22b) reveal that not only niCCe, but also muCCe take the *+t* ending. They alternate with *murcá*, *mutná*, *mušká*, *mukšá*,

25. A phonological rule changes the sequence of *i + a* into *iya*.

exactly in the same way that *nilvét*, *nidhét*, and *nidkét* in niCCe alternate with *nilvá*, *nidhá*, *nidká*.

Hence, instead of the morphological niCCe environment, the proper CVCCe environment for *+t* addition is required. It includes both niCCe (*nif'al*) and muCCe (*huf'al*) of etymologically weak verbs with final *y* or *w*, and it generalizes the apparently restricted environments more successfully. The alternations with *+a* suffixes may be explained by the overlapping found between CVCCe and the Xe pattern described in Section 5 (*d*). Since the endings are phonetically alike, the speakers opt for the final Xe base rather than for the CVCCe, and consequently, they sometimes create forms such as *muška* and *nilva* instead of *mušket* and *nilvet*.

7. Gentilic Nouns

Words such as *yehudi* 'Jewish', *carfatí* 'French', *datí* 'religious', *ivrí* 'Hebrew', *rusí* 'Russian', *'anglí* 'English', *micrí* 'Egyptian', have two feminine endings: one with *+a* (phonetic *iyá*) denoting nouns, namely, the person (the woman) coming from this local origin or faith; the other with *+t* denoting attributive-adjectives, e.g., *yehudiyá* 'Jewess', *yehudit* 'Jewish', *carfatiyá* 'French woman', *carfatít* 'French (adj)', *datiyá* 'religious woman', *datít* 'religious', etc.

Podolsky (1981, pp. 155–156, and previously Rosén, 1957, p. 236) proposed an interesting distinction between the bases that take only *+t* vs. those that take both *+t* and *+a* feminine endings, based on accentual patterns. If a word has a stable stress, usually penultimate, it has only one feminine ending *+t*, as in *síni/sínit* 'Chinese'. If the stress is unstable (i.e., final, as in *'anglí/'angliyá/'angliyót*) the word takes the two feminine forms (e.g., *'angliyá/'anglít*), with the above-mentioned semantic distinction. Thus the stress serves as a morphological factor, since it enables the prediction of which nouns are liable to be formed with the *+a* ending.

It was observed earlier that the *+a* ending is the most common among derivational feminine markers. The *+it* and *+t* suffixes are fairly uncommon. A comparison of the feminine nouns with *+it*²⁶ to those with *+iya* endings reveals that there are 251 nouns with *+iya* and 417 with *+it* endings, i.e., the rate of feminine nouns with *iya* is relatively high as compared to those with *it*. For instance, *nagariyá* 'carpentry shop', *sand-*

26. The final *+it* is the actual phonetic output in derivational morphemes. In inflectional morphemes it is only *+t* because the base masculine form already ends in *+i*.

lariyâ 'shoemaker's shop', *'agvaniyâ* 'tomato', *ta'anît* 'fast', *toxnit* 'plan', *'arvît* 'evening prayer', etc.

The relations are entirely different in inflectional morphemes. The status of the phonetic *+iya* ending is very minor. It fits less than 2% of approximately 2,000 nouns and adjectives with *+i* ending in the masculine form. The forms in (23) illustrate these exceptional cases with *+iya* ending.

- (23) a. *cvi/cviyâ* 'deer', *'anî/'aniyâ* 'poor', *nakî/nekîyâ* 'clean', *šeni/šniyâ* 'second', *garî/griyâ* 'irritable', *levî/leviyâ* 'Levite', *tari/triyâ* 'fresh'.²⁷
 b. *noxrî/noxriyâ* 'foreigner' (*noxrît*²⁸ is restricted as an adjective in the phrase *pe'â noxrit* 'wig'), *'admonî/'admoniyâ* 'reddish' (alternating with *'admonît*).
 c. *co'anî/co'aniyâ* 'gipsy' (cf. *co'anît*), *yehudî/yehudiyâ* 'Jewish' (cf. *yehudît*), *temanî/temaniyâ* 'Yemenite' (cf. *temanît*), *carfatî/carfatiyâ* 'French' (cf. *carfatît*), *'aškenazî/'aškenaziyâ* 'Ashkenazi' (cf. *'aškenazît*).

The *+iya* ending is rarely found in nouns that have a base which ends in *e* (cf. Section 5, example in (18)), e.g. *yefe(y)fê/yefe(y)fiyâ* 'very beautiful', *homê/homiyâ* 'noisy' (besides *homâ*), *porê/poriyâ* 'fruitful' (besides *porâ*).²⁹ Finally, the word *kômer* 'priest' with no vocalic ending takes two endings: *komriyâ* 'nun', *komrît* 'minister's wife'.

The generalizations stated by Podolsky (1981) refer to a very limited semantic category: nouns denoting local origin or religion which include very few nouns. This semantic category with *+iya* ending belongs to less than 2% of the cases mentioned. Podolsky lists two exceptions to his statement: *lita'î/lita'ît* 'Lithuanian' (not **lita'iya*), and *yisre'elî/yisre'elît* 'Israeli' (not **yisre'eliya*).³⁰ A few more lexemes can be added to these exceptions.

- (24) *plištî/plištît* 'Philistine' (not **plištiya*), *roma'î/roma'ît* 'Roman' (not **roma'iya*), *'ašuri/'ašurît* 'Assyrian' (not **'ašuriya*), *muslemî/muslemît* 'Moslem' (not **muslemiya*), *'aramî/'aramît* 'Aramaic' (not **'aramiya*), *hitî/hitît* 'Hittite'.

27. The nouns and adjectives in this category have no other feminine forms, such as **cvit*, **anît*, **nakît*, **šenît*, **garît*, **levît*, **tarît*. Note that *šenît* 'secondly' exists as an independent adverb, not as an inflectional feminine variant.

28. In post-biblical Hebrew, *noxrit* was the noun referring to a gentile woman.

29. Compare *boxê/boxiyâ* 'crying', *cofê/cofiyâ* 'observing' cited by Ornan (1971b, p. 44) as high stylistic variations of the standard *boxâ*, *cofâ*.

30. Podolsky suggests that the possible reason for the *yisre'elît* form is its variation with the penultimate *yisre'êli*, where the *+t* is predictable.

It seems, therefore, that the morphophonemic distinction offered by Podolsky is true only as a limited minor rule and must be assigned to very few lexical items. It is not a general rule which applies to all the gentilic nouns ending in stressed *+i*. The generalizations regarding these nouns should be restated, with special reference to a minor lexicosemantic rule. The relevant rules are described in R_1 – R_3 :

- R_1 Masculine forms ending in *i* (including gentilic nouns) take the *+t* suffix in the feminine.
- R_2 In a few gentilic nouns, there exists a morphosemantic distinction between nouns with *+a* ending and adjectives with *+t* ending, and they must be lexically assigned.
- R_3 Single masculine forms with ultimately stressed *i* take *+a* feminine ending.³¹

The rule stated in R_1 is a general morphophonemic rule of Hebrew. It refers to over 98% of nouns and adjectives with *i* ending in the masculine, whether ultimately stressed (25a), or not (25b), whether gentilic or not:

- (25) a. *'aviví/'avivít* 'spring-like', *'arcí/'arcít* 'earthly', *bavlí/bavlít* 'Babylonian', *tiv'í/tiv'ít* 'natural', *kasdí/kasdít* 'Chaldean', etc.
- b. *'afrikáni/'afrikánit* 'African', *'orgáni/'orgánit* 'organic', *kúši/kúšit* 'Ethiopian', *téxni/téxnit* 'technical', etc.

The statements in R_2 and R_3 are minor. They are restricted to a small number of morphemes, therefore, they must be lexically assigned to the morphemes: in R_2 to the morphemes like those mentioned in the beginning of this section and those in (23c); in R_3 to the morphemes listed in (23a–b).³² The examples presented immediately after (23) are obviously exceptional in all respects and will be singularly assigned in the lexicon.

Note in conclusion that *yehudít* 'Jewish', *'aravít* 'Arabic', *'ivrít* 'Hebrew', *'anglít* 'English', *turkít* 'Turkish', *parsít* 'Persian', etc., as language names are feminine nouns, however, their *+it* ending is derivational rather than inflectional.³³

31. See note 25 above. Note that the nominal forms with only the *iya* ending for the feminine have original *i* in their base masculine form, as in (23a). In the other nominals, the *i* is derivational.

32. See Schwarzwald (1981, pp. 319–320).

33. Historically, they could have been derived as inflected attribute adjectives modifying *safā* or *lašōn* 'language', both of which are feminine. However, synchronically they are derivational nouns with *+it* ending.

8. The +*it* Allomorph (6c)

The +*it* feminine suffix is the most frequent inflectional feminine ending, occurring in hundreds of nouns and adjectives. The two major groups include masculine forms ending in *Xan*, as in (26), and in *Xay*, as in (27), both denoting attributes (traits) or occupations.

- (26) *le(y)cân/le(y)canît* 'clown', *mardân/mardanît* 'rebel', *baxyân/baxyanît* 'weeper', *dakdekân/dakdekanît* 'meticulous', *baššân/baššanît* 'linguist', *mad'an/mad'anît* 'scientist', *šakrân/šakranît* 'liar', *čelân/čelanît* 'cellist', *badhân/badhanît* 'jester', etc.
- (27) *kanây/kana'it* 'jealous', *ramây/rama'it* 'swindler', *rašây/raša'it* 'allowed', *yomanây/yomana'it* 'diarist', *'ahrây/'ahra'it* 'responsible', *haklây/hakla'it* 'farmer', *'afsenây/'afsena'it* 'quartermaster', etc.

The differences between the examples in (27) and (21) must be noted. Although they both end in *i* or *y*, there is no change in stress in (21), whereas in (27) the stress shifts to the last syllable.

Exceptional to the *Xan* environment are the pairs *'almân/'almanâ* 'widower/widow', *ra'anân/ra'ananâ* 'fresh', *ša'anân/ša'ananâ* 'tranquil', *ye(y)nân/ye(y)nēnet* 'wine maker'. The first two pairs are found in the Bible, where the +*a* ending is quite frequent (see n. 16). The words *'almanâ* and *ra'ananâ* were adopted in modern Hebrew without any change because of their frequency of use; *ša'ananâ* was probably formed by analogy to *ra'ananâ* (but see Section 9 below). *Ye(y)nan* is a modern Hebrew word, however the productivity and usefulness of the feminine form are questionable.

The +*it* ending typifies also about 20% of the nouns of CaCaC occupational pattern (see example (35) and the discussion there). Since this pattern is dealt with at some length in Section 9 it will not be further elaborated in this section.

Loan words, as in (28), and four or more consonantal-root words, as in (29), are inflected for the feminine with +*it* ending. The examples in (29) form a minor group compared to those exemplified in (26), (27) and (28).

- (28) *studēt/studētit* 'student', *'asistēt/'asistētit* 'assistant', *brunēt/brunētit* 'brunette', *diplomāt/diplomātīt* 'diplomat', *'apotrōpos/'apotrōpsit* 'guardian', *čelist/čelistit* 'cellist', *barôn/*

baronít 'baron', *'idi'alist/'idi'alistit* 'idealist', *barbár/barbárit* 'barbarian',³⁴ *virtu'óz/virtu'ózit* 'virtuoso', *'astronáut/'astronáutit* 'astronaut', etc.

- (29) *'ezráh/'ezráhít* 'citizen', *'axzár/'axzarít* 'cruel', *gizbár/gizbarít* 'treasurer', *'efróah/'efrohít* 'chick', *hedyót/hedyotít* 'ignorant', *ša'amum/ša'amumit* 'melancholic', *búlbúl/búlbulit* 'bulbul (bird)', colloquial—'bewildered', etc.

The examples in (29) fit various stems mentioned above such as XaC (with +*et* ending, see Sections 4 and 9) XoC and XuC (with +*a* endings, see Sections 4 and 5 (b)2, 3). They are exceptional in this respect and should therefore be lexically assigned. However, note that the nominal forms presented in (30) are multiconsonantal words too, but instead of +*it* they regularly take +*a* (30a), and rarely +*et* (30b) endings. These nominal forms share a morphological feature of consonant repetition in the root (C₁C₂C₃C₂C₃). The +*a* ending is frequent, as in (30a), sometimes freely alternating with +*et*. Seldom is +*et* the only feminine marker of this class (30b). Apparently, (30a) adds another environment to the +*a* ending stated in R₄. The examples in (30b) constitute a minor exceptional rule to the +*a* distribution and could be stated as R₅, thereafter assigned to the relevant lexical items.

- (30) a. *'adamdám/'adamdamá* 'reddish', *sgalgál/sgalgalá* 'oval', or 'violet-like', *khalhál/khalhalá* 'bluish', *'afarpár/'afarpará-*
'afarpéret 'greyish', *levanbán/levanbaná* 'whitish', *kcarcár/kcarcará* 'shortish', *ktantán/ktantaná* 'tiny',³⁵ *šfanfán/šfanfaná*³⁶ 'small rabbit', *ksafsáf/ksafsafá-ksafséfet* 'silvery', *hafaxpáx/hafaxpaxá-hafaxpéxet* 'wayward', *raxráx/raxraká* 'softish', etc.
b. *chavháv/chavhévet* 'yellowish', *yerakrák/yerakréket* 'greenish'.

R₄ Five-radical nominal morphemes with duplicated second and third consonants take +*a* feminine suffix.

R₅ Some five-radical nominal morphemes take +*et* feminine suffix and must be lexically assigned.

34. *barbár* is the noun; *barbári* is the adjective. The feminine forms of both masculine forms coincide in *barbárit*.

35. Two lexical items of this kind with a diminutive meaning, *ktantán* 'tiny' and *šharhár* 'blackish', have the regular *ktantaná* and *šharhará* (*šharhêret*, according to Even-Shoshan) feminine forms, next to *ktantónet* and *šharhóret* which phonetically resemble the diminutives illustrated in (39).

36. One finds *šfanfanit* in children's poetry, too, where the phonetic *-an* determines the choice of +*it*.

Hence, the environments for *+it* can be summarized as follows: *+it* is added to:

- (a) Xan, Xay occupational or attributive bases.
- (b) Loan words.
- (c) Some CaCaC occupational bases.

9. The *+et* Allomorph (6d-e)

The classification offered by Ornan (1971b) regarding the *+t* feminine suffix can be recapitulated in the following manner: *+et* is added following XaC and XeC sequences. As recalled, his third environment niCCe has previously been discussed in Section 6.

These two environments, XaC and XeC, are morphophonemic, because they take into consideration only the final base with no reference whatsoever to any specific morphological pattern.

A closer look at the nominal and adjectival participles reveals few exceptions to this generalization. The examples in (31) present a small sample of expected forms according to Ornan; those in (32) show deviations, e.g.,

- (31) a. *me'uzân/me'uzénet* 'horizontal', *mehupnât/mehupnénet* 'hypnotized', *mumhâš/mumhêšet* 'actualized', *murâm/murêmet* 'elevated'.
- b. *šofet/šoféet* 'judge', *šoter/šotéret* 'policeman/woman', *mistagéf/mistagéfet* 'ascetic', *'oyév/'oyévet* 'enemy', *metapél/metapélet* 'male-nurse/nursemaid', etc.
- (32) a. *niflâ/niflâ'a* 'wonderful', *ne'elâs/ne'elâsâ* 'joyous', *norâ/norâ'a* 'horrible',³⁷ *ne'edâr/ne'edârâ* 'glorious', *nisgâv/nisgavâ* 'grand', etc.
- b. *šomém/šomemâ* 'empty', *šokék/šokekâ* 'noisy', *romém/romemâ* 'elevated', *bogéd/bogdâ-bogêdet* 'traitor', *'ovêd/'ovdâ-'ovêdet* 'lost', *bodéd/bodedâ* 'lonely', etc.
- c. *matrid/matrêdet* 'annoying', *mavriah/mavráhat* 'smuggler'.

In general, the nominal forms of *nif'al* pattern take the *+et* ending as in *niftâr/niftêret* 'deceased', *nisâ/nisêet* 'married'. The rate of *+a* feminine ending as in (32a), compared to *+et* is 1:8, i.e., the majority of forms take the *+et* ending as expected.

The CoCeC pattern dominantly takes the *+et* ending. The forms with *+a* in (32b) are stylistic variants to those with *+et* and they belong to

37. In colloquial Hebrew the feminine form is *nora'it* alternating with *nora'a*.

highly literate forms. Interestingly, some of the forms in (32b) have identical second and third radicals, as in *šomém*, *romém*, *šokék*, *bodéd*. Is this a mere accident? Finally, *matmidá* and *mavrihá* as expected by the XiC pattern (see Section 5 (b) 1 above) alternate unexpectedly in (32c) with *matmédet*, *mavráhat*³⁸ for stylistic reasons too.

Therefore, it is obvious that the +*et* feminine endings are dominant in the environments stated by Ornan. Deviations are either an idiosyncrasy of specific lexical items or a stylistic variation, where the marked form with +*a* belongs to a higher register than the unmarked +*et* ending.

The XeC environment suits the CiCeC³⁹ pattern of the so-called “deformed” nouns and adjectives. One finds many examples of this kind, as in (33), with only two exceptions: *tipěš/tipšá* ‘silly’, *pikéah/pikhít* ‘smart’ (next to *pikáhat*).

- (33) *’itér/’itéret* ‘left-handed’, *gidém/gidémet* ‘one-handed’, *gibén/gibénet* ‘hunchback’, *herěš/herěšet*⁴⁰ ‘deaf’, *zivér/zivéret* ‘squint-eyed’, *piséah/pisáhat*⁴¹ ‘lame’, *’ikél/’ikélet* ‘bow-legged’, *kipéah/kipáhat* ‘very tall’, *’ilég/’iléget* ‘stammerer’, *keréah/keráhat* ‘bald’, etc.

The XaC environment should have also fitted into the CaCaC⁴² pattern of the so-called craftsman, as in (34), however, the data are not as decisive as for the CiCeC nominal pattern. The examples in (35) demonstrate the +*it* ending of nouns belonging to this pattern. Those in (36) present nouns that fluctuate with regard to the feminine endings, and in (37) one finds nouns with +*a* ending. The +*et* ending is dominant (about 72% of the examples), however, the rate of occurrence of +*it* is not so minor, as it includes about one fifth of the nouns. The rest of the nouns either fluctuate or take the “unexpected” +*a* ending.

- (34) *hayát/hayéret* ‘tailor’, *harát/haréret* ‘engraver’, *gabán/gabénet* ‘cheese-maker’, *kašáv/kašévet* ‘monitor’, *galáš/galěšet* ‘skier’, *dayár/dayéret* ‘tenant’, *hayál/hayélet* ‘soldier’, *yazám/yazémet* ‘initiator’, *calám/calémet* ‘photographer’, etc.
- (35) *sapár/saparit* ‘hairstylist’, *balán/balanit* ‘bath attendant’, *hazán/hazanit* ‘cantor’, *baláš/balašit* ‘detective’, *katán/katanit*

38. The adjective *magdělet* ‘magnifying’ is restricted to the *zxuxit magdělet* ‘magnifying glass’ phrase. Elsewhere it is *magdila*.

39. CiCeC pattern is etymologically CiCCeC with a medial geminate consonant.

40. The vowel *i* changes to *e* in front of *r* and ‘.

41. See Section 2, example (8) above, and the explanation there.

42. Etymological CaCCaC with a medial geminate consonant.

- 'flax worker', *kanâr/kanarît* 'violinist', *calâf/calafît* 'sniper', *tabân/tabânît* 'carrier of straw', etc.
- (36) *ganâv/ganêvet-ganavît* 'thief', *tabâh/tabâhat-tabahît* 'cook', *zabân/zabênet-zabanît* 'shop assistant', *ganân/ganênet* 'kindergarten teacher', *ganân/gananît* 'gardener'.
- (37) *hatâ/hata'â* 'sinner', *halâš/halašâ* 'weak'.

The fact that two of the fluctuating nouns in (36), *zabân* and *ganân*, as well as some of the nouns with *+it* ending in (35), *balân*, *hazân*, *tabân*, *katân*, end in *+an* is not accidental. It was previously observed (Section 8) that the *+an* ending of occupational nouns requires the *+it* feminine suffix. It is clear that the phonetic *+an* ending, rather than the CaCaC pattern structure or the XaC morphophonemic environment is what determined the suffix *+it*.

These findings were supported in part by productivity tests. The subjects (143 elementary school pupils of 12 years old, and 99 adults, all native Hebrew speakers) were instructed to write or to say the feminine form of a given masculine form. They were familiar with some of the words and unfamiliar with others.⁴³ The results show fluctuations between *+et* and *+it*, with a considerable tendency towards the *+it* suffix (40% with *+it*, 32% with *+et*). The *+et* ending was quite common in some of the familiar forms, such as *zamâr/zamêret* 'singer', *nehâg/nahêget* 'driver', *dayâg/dayêget* 'fisherman/woman', but they occurred in other cases, such as *rašâm/rašêmet* 'registrar', *hayât/hayêtet* 'tailor', *sayâr/sayêret* 'scout', *nayâh/nayâhat* 'static'. The *+it* was especially common in unfamiliar words, such as *davâd/davadît* 'kettlemaker', *kašât/kašatît* 'decorator' or 'bowman' (with *tet* or *tav* spelling respectively). The suffix *+it* was almost unanimously chosen in masculine nouns of *+an* ending, e.g., *dayân/dayanît* 'judge', *kavân/kavanît* 'lineman/woman', *tabân/tabânît* 'carrier of straw', *hazân/hazanît* 'cantor', *nagân/naganît* 'player'. The *+a* suffix was hardly chosen at all as a feminine marker of this pattern.

The results strengthen the data formerly observed, that the *+it* ending of CaCaC occupational pattern is quite common especially in nouns of the phonetic *+an* ending. They also hint that the *+it* will be derived more automatically in newly-formed nouns of this pattern for three reasons: (a) it is more common in the language as a feminine inflectional marker (see Table 1 above); (b) it typifies the occupational patterns as observed

43. Other patterns, such as suffixal *+an*, *+ay* and the CéCeC pattern were tested, too. The nouns of the various patterns were presented at random in order to prevent undesirable paradigmatic responses. The results support conclusively the distributions discussed so far, except for the CaCaC occupational pattern.

in Section 8, hence the morphophonemic clues are less dominant than morphosemantic clues, therefore the *+it* ending is preferred; (c) phonetic *+it* is very common due to *+t* suffixation in Xi base stems (as demonstrated in Sections 6 and 7).

As for the examples in (37), they belong to the CaCaC (etymologically geminate) pattern. However, they do not carry the craftsman meaning. This is probably the reason for their deviation from the tendency to form the feminine forms with *+et* or *+it* endings. They fit very naturally into the nonoccupational CaCaC pattern presented in Section 5 (e).⁴⁴

Considerations of symmetry concerning the vowels and patterns could lead to the prediction that, since the *+et* allomorph occurs in XeC and XaC patterns, it should occur in XoC pattern as well, namely, in all the nonhigh vowels in final syllables. In fact, XoC takes the *+a* ending, as stated in Sections 4 A(2) and 5 (b)2. Only when the final consonant is *n*, and it forms part of the suffixal diminutive derivational marker, is the *+et* ending likely to occur. The suffix *+on* is one of the diminutive (sometimes derogatory) markers in Hebrew. Nouns and adjectives possessing this suffix take the *+et* feminine marker. The nouns and adjectives in (38) serve as base stems for the derivation of the diminutive (and mockery) forms in (39) to which the *+et* suffix is attached, e.g.,

- (38) *bahúr* 'young man', *yehudí* 'Jew', *yašiš* 'old man', *barváz* 'duck',
yèled 'boy', *kèlev* 'dog', *sus* 'horse', *tamím* 'naïve', *tipěš* 'silly',
dov 'bear', *miskén* 'poor', *hamúd* 'cute'.
- (39) *bahurón/bahurónet* 'young lad', *yehudón/yehudónet* 'Yid',
yešišón/yešišónet 'old man', *barvazón/barvazónet* 'duckling',
susón/susónet 'pony', *tmimón/tmimónet* 'naïve', *tipšón/tipšónet*
 'silly little fool', *dubón/dubónet* 'young bear, fattish', *miskénón/*
miskénónet 'miserable', *hamudón/hamudónet* 'cute'.

Other nouns with *+on* derivational suffix are inflected for the feminine with *+a*, as expected (see Section 5 b(2)) in (40), or with *+it* in the exceptional *kilón/kilonit* 'someone with wedge-shaped head', because they do not carry the diminutive meaning.

- (40) *'aharón/'aharoná* 'last', *hícón/hiconá* 'outer', *ge'eyón/ge'eyoná*
 'boastful', *'elyón/'elyoná* 'high', *kadmón/kadmoná* 'ancient',
tahtón/tahtoná 'lower', *tixón/tixoná* 'middle'.

44. The words *'aváz* 'gander', *'ayál* 'deer' belong etymologically to the same pattern as the occupational nouns, see Introduction and note 42, but they take the *+a* ending. Note in this connection that many of the female animal nouns are formed with *+a* ending. See the relevant examples in (11), (13), (15), (17), (19), (20). Exceptional are *'arnáv/'arnévet* 'coney', *drór/drorit* 'sparrow', but *dróra* as a female proper name.

The data observed on the *+et* allomorph point to the following constraints:

- (a) Participle forms of the type XeC and XaC.
- (b) Nominal patterns of CiCeC or CaCaC type carrying deformed or occupational meanings, respectively.
- (c) Forms of the Xon type carrying the diminutive (derogatory) meaning. Morphophonemic factors tend to prevent the *+et* ending in CaCaC occupational pattern in the case of *n* in final position.

Exceptions to (a-c) are: (1) stylistic free variation of *+et* with *+a* or *+it*; (2) lexical distinction between feminine forms with *+et* and other suffixes (cf. *ganēnet/gananit*, *magdelet/magdilat*). They must be assigned to each relevant lexical item separately.

10. Conclusion

In the previous sections (5-9) we have described and classified the distribution of the feminine inflected allomorphs in modern Hebrew based on formal constraints set by the masculine forms. Table 2 summarizes the findings. The environments are listed according to the masculine stem type endings to which the feminine suffixes are added, followed by comments specifying them. The relevant examples are given in parentheses next to the environments.

TABLE 2: The Distribution of the Inflectional Feminine Suffixes

Masculine Stem Type		Feminine Suffix Type			
		+a	+et/+at	+it	+t
Final Syllables	#CVC#	+	—	—	—
	Xi	+	—	—	+
	XiC	+	—	—	—
	XuC	+	—	—	—
	XeC	+	+	—	—
	XoC	+	+	—	—
	XaC	+	+	+	—
	Xe	+	—	—	+
	Loan	—	—	+	—

Comments on Table 2:

1. The final C in the stem type refers to any consonant, including phonemic /' / or /' /, even when phonetically absent.

2. CVC monosyllabic stem type takes only final *+a* (11, 15).
3. XiC masculine stem type takes *+a* ending (12), but the adjectival type derivational Xi takes the *+t* feminine suffix (21, 24, 25), with several exceptions that take *+a* (23a).⁴⁵
4. XuC stem type takes only *+a* ending (14).
5. XoC stem type takes *+a* ending (13, 40), unless it belongs to the *+on* diminutive (derogatory) stem, where the unstressed *+et* is dominant (39).
6. XeC stem type takes *+a* ending if it refers to the CaCeC pattern (17) or to the penultimate CéCeC pattern (20); otherwise it takes the *+et* ending (33).⁴⁶
7. XaC stem type requires *+a* in nonoccupational CaCaC (19) or in reduplicate roots (30). In participles (31) and occupational CaCaC (35), it requires *+et* unless it ends in *+an* (26), or *+ay* (27), occupational (35), and attributive nominals where *+it* is expected.
8. Xe stem type changes to *+a* in the feminine (18), unless it belongs to CVCCe (niCCe or muCCe) pattern, where the *+t* occurs (22).
9. Loan words take a unique ending *+it* (28).

The environments stated are absolutely morphological in the following cases:

1. Monosyllabic stems.
2. XaC participles, as in niCCaC, meCuCaC, muCCaC.
3. CVCCe (niCCe or muCCe) stem; Xe stem.
4. CaCeC participle base.
5. CéCeC segolate base.
6. Duplicate roots; multiconsonantal roots.

The environments are morphosemantic in:

7. Xon diminutive base ending.
8. Occupational/nonoccupational CaCaC; occupational and attributive *+an*, *+ay* base endings.

The environments are morphophonemic in the rest of the cases, including the loan words category, i.e.,

9. XiC, XuC, XoC, XeC, Xi stems.
10. Loan words.

The environments stated provide a useful device for the prediction of the feminine inflected forms. Given a specific masculine base form, the proper feminine suffix can be automatically derived with relatively few exceptions.

45. See the discussion about gentilic nouns in Section 4.

46. In case of phonemic /' / in this stem, the *+et* ending is realized as stressed *+et*, as in [korét] (</kore' +et/ 'reading').

XaC, XeC and Xe environments are the most opaque because various factors coincide: morphological, morphosemantic and morphophonemic. It is obvious that in the case of XaC occupational ending, the morphosemantic factors intermingle: Xan occupational stem with *+it* ending interferes with occupational CaCaC with *+et* ending, and therefore many nouns of CaCaC pattern take the *+it* ending for the feminine.⁴⁷

The fact that phonetic *+it* is the most popular ending plays an important role in this tendency, too. The *+t* attached to the Xi bases together with *+it* suffixed to the loan, Xan, and Xay bases constitute the largest number of *+it* endings (see percentages in Table 1). This phonetic influence no doubt causes the increases of *+it* ending in CaCaC occupational pattern.

The interference of the various factors occurs not only in the CaCaC occupational pattern but also in the morphological multiconsonantal duplicate roots and morphophonemic XaC, as demonstrated in (30a–b). It is also frequent in the morphophonemic Xe and the morphological niCCe and muCCe, as demonstrated in (18) and (22), and in *mištané/mištaná-mištanét* 'changing', *mukce/mukca-mukcet* 'set apart'. One cannot point, however, to the most important factor towards which new morphemes will be inclined. They will probably be an extension of the proposed major factor environments, with deviating single lexical items.

The autonomous exceptions to the classifications presented in Table 2 are relatively rare. They include a few lexical items with idiosyncratic morphological endings, such as *mumhê/mumhît* 'expert', instead of the expected **mumhet*, or even *mumha*, *kômer* 'priest' /*komriyâ* 'nun' / *kom-rît* 'minister's wife', *rofê/rof'â* 'physician' instead of **rofet* (like *korê/korét* 'reads', with phonemic /'/), *giyôr/giyôret* 'proselyte' instead of **giyora*, *tinôk/tinôket* 'baby' instead of **tinoka*. Others exhibit free variation, such as *mumâr/mumêret* 'apostate' as expected, and *mumarît* as unexpected, *rašâ/reša'â* 'wicked', as expected, and *raša'it* as unexpected, *šovâv/šovavâ* 'naughty' and *šovavît*, *'ikâr/'ikarâ-'ikarît* 'farmer', etc. (and see (32b) above).

The unexpected forms alternating with the regular forms serve in general as stylistic variations. The expected endings provide the standard, unmarked, everyday forms, whereas the marked forms with the unexpected ending provide the high stylistic, literary, learned forms. The oddity of their inflection will be handled, like all the lexeme idiosyncratic features, in the lexicon. In other words, nouns and adjectives deviating from the generalizations stated above will be separately marked in the lexicon for

47. Supported, as recalled, by productivity tests.

their inflected forms, either by minor rules as demonstrated in R_2 , R_5 or by single lexical markings.

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